



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|--------------------|
| 10/015,404 | 12/12/2001 | Takashi Ito | S004-4479 | 4066 |
| 7590 | 09/27/2004 | | EXAMINER | |
| ADAMS & WILKS 31st Floor 50 Broadway New York, NY 10004 | | | | EDWARDS, ANTHONY Q |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2835 | |

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|--------------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | .10/015,404 | ITO ET AL. |
| | Examiner | Art Unit |
| | Anthony Q. Edwards | 2835 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 July 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 21-23 and 25-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 21-23 and 25-34 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 24-32 is withdrawn in view of the new rejection to claim 21, and specifically relating the “ground pattern” provided on the substrate of U.S. Patent No. 5,386,215 to Brown. The new rejection of the claims follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 23, 25-27, 29-31, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,260,915 to Houlihan in view of U.S. Patent No. 5,386,215 to Brown. Referring to claim 21, Houlihan discloses an arm wearable communication device (10). The device comprises a case (20b), a wireless communication circuit contained in the device (see U.S. Patent No. 4,847,818 to Olsen, which is incorporated by reference in Houlihan), a wearable body (20a, 20c) pivotally mounted to the case (20b) to enable wearing of the communication device on a user’s arm (see Figs. 1 and 2), a sound unit (52) provided in the wearable body (20c), and an antenna (13, 14) provided in the wearable body (see col. 3, lines 30-33 of Olsen for the disclosure an antenna provided in the wearable body).

Houlihan does not specifically disclose the antenna (13, 14) as a “dielectric chip antenna.” Brown teaches a planar dielectric chip antenna (see Fig. 5 and col. 2, lines 39-45) having directivity only in a direction opposing the user’s arm when the device is being worn (see

Figs. 1B and 2, as well as col. 6, lines 3-11). Brown also discloses the dielectric chip antenna comprising a substrate (104), an antenna pattern (108) on the substrate, and a ground pattern (105) on the substrate. It should be noted that the conducting plane (105) of Brown is, in fact, a "ground pattern," formed by metallization on the bottom surface of the dielectric chip antenna (see col. 6, lines 12-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the arm wearable communication device of Houlihan to include a dielectric chip antenna, as taught by Brown to control the propagation of radio waves from the device of Houlihan for more effective radiating and receiving of signals.

Referring to claim 23, Houihian in view of Brown disclose an arm wearable communication device, wherein the directivity of the dielectric chip antenna (101) is perpendicular to the antenna pattern. See Fig. 1B and col. 6, lines 3-11 of Brown.

Referring to claim 25, Houihian in view of Brown disclose an arm wearable communication device, wherein the ground pattern (105) is provided on a side of the substrate closer to the user's arm (i.e., the bottom of the 101), and the antenna pattern (108) is provided on a side of the substrate further from the user's arm (i.e., the top of 101) when the device is being worn on the user's arm.

Referring to claim 26, Houihian in view of Brown disclose an arm wearable communication device, wherein the directivity of the dielectric chip antenna (101) is perpendicular to the antenna pattern (108) and in a direction opposite to the user's arm when the device is being worn on the user's arm (see Figs. 1B and 2 of Brown).

Referring to claims 27 and 29, Houihian in view of Brown disclose an arm wearable communication device, wherein the wearable body (20) has a curved convex side, and the

wearable body comprises a pair of wearable bodies (20a and 20c) attached to opposite sides of the case (20b), respectively. See Fig. 3 of Houlihan.

Referring to claim 30, Houlihan in view of Brown disclose an arm wearable communication device, wherein the dielectric chip antenna (101) comprises a dielectric chip antenna disposed in each of the wearable bodies. See Olsen, which is incorporated by reference in Houlihan, for antennae (14, 15) contained in opposite sides of the case (20b).

Referring to claims 31 and 33, Houlihan in view of Brown disclose an arm wearable communication device, wherein the wearable bodies (20a and 20c) comprise connectable parts (30a and 30b) of a wrist strap (20). See Fig. 3 of Houlihan.

Referring to claim 34, Houlihan in view of Brown disclose an arm wearable communication device, wherein the dielectric chip antenna (101) is provided in the wearable body (20) between the sound unit (52) and the wireless communication circuit (see col. 3, lines 20-24 of Olsen).

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan in view of Brown, and further in view of U.S. Patent No. 6,366,250 to McConnell. Houlihan, as modified, discloses the device as claimed, except for the dielectric chip antenna having a curved convex shape on a side on which the antenna pattern is provided. McConnell teaches flexible dielectric or strip antennas (62, 64) having a curved convex shape on a side (i.e., the outer side), which the antenna pattern is inherently formed. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the device of Houlihan to include a flexible dielectric antenna, as taught by McConnell, to allow for a flexible strap that provides more comfort to a user.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan in view of Brown, and further in view of U.S. Patent No. 5,943,020 to Liebendoerfer. Houlihan, as modified, discloses the device as claimed elements, except for the communication circuit of the device compares signals received by the respective chip antennas. Liebendoerfer discloses positioning two or more antenna to accomplish diversity reception (see column 6, lines 8-11 and 34-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the wearable communication device of Houlihan to include a pair of antennae, each provided in the wearable body portions, to compare signals, as taught by Liebendoerfer, so as to provide dual frequency mode reception or diversity reception in a radiotelephone.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent No. 5,189,431 to Marinelli discloses a removable antenna coupling for wrist watch pager having a wearable body (112, 112') with curved convex side and antenna (110) within the wearable body. U.S. Patent No. 5,410,749 to Siwak et al. disclose a microstrip antenna having a substrate of dielectric material (304), an antenna element (302) and a ground pattern (314).

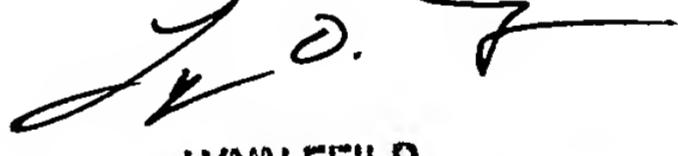
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Q. Edwards whose telephone number is 571-272-2042. The examiner can normally be reached on M-F (7:30-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2800, ext. 35. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 21, 2004

aqe



LYNN FELD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800